



*Red Lacewing*  
(*Cethosia cydippe*)  
on *Penia* vine

# METAMORPHOSIS

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## PLANNING AND ORGANIZATION MEETINGS

A quarterly meeting is scheduled in order to plan club activities and the magazine.  
See BOIC Programme.

## CONTACT ADDRESS AND MEMBERSHIP DETAILS

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Membership fees are \$30 for individuals, schools and organizations.

## AIMS OF THE ORGANIZATION

- To establish a network of people growing butterfly host plants;
- To hold information meetings about invertebrates;
- To organize excursions around the theme of invertebrates e.g. butterflies, native bees, ants, dragonflies, beetles, freshwater habitats, and others;
- To promote the conservation of the invertebrate habitat;
- To promote the keeping of invertebrates as alternative pets;
- To promote research into invertebrates;
- To encourage the construction of invertebrate friendly habitats in urban areas.

## MAGAZINE DEADLINES

If you wish to submit an item for publication the following deadlines apply:

March issue – February 1<sup>st</sup>

June issue – May 1<sup>st</sup>

September issue – August 1<sup>st</sup>

December issue – November 1<sup>st</sup>

All articles should be submitted directly to the Editor [daphne.bowden1@bigpond.com](mailto:daphne.bowden1@bigpond.com)

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## COVER PAINTING

Red Lacewing (*Cethosia cydippe*) on *Adenia* vine – painting by Elaine Allison



## FROM THE PRESIDENT

I would like to start by thanking those who have contributed articles for the Magazine this quarter. Once again there is a delightful diversity of material which I'm sure the readers will enjoy. To those who have contributed "keep them coming" and to those who think they would like to write something please remember you are most welcome no matter how big or small your submission.

Working on the Magazine is a group effort but I particularly want to thank the Editor Daphne Bowden who works many long hours behind the scenes to pull everything together into the final product you receive.

In addition to Daphne's hard work, the club committee has been beaver away with the successful completion of the display and activities at Redlands IndigiScapes Centre in early June. As well as displaying educational and craft material on all things entomological, the club introduced book readings and colouring in of insect pictures for the children attending on the day. Special thanks to Dawn Franzmann and Jill Fechner for their book reading skills. The children loved it! Additionally thanks to Bernard Franzmann for helping out on the day.

This addition of the magazine introduces a Logo competition which we hope will attract those of you who are budding artists and designers. We also have a few exciting competitions in the pipeline so watch this space for those!

Finally we are putting together a calendar of activities for the next twelve months to ensure we have lots of interesting activities for members to attend. Any ideas and contacts for leading activities are most welcome. Our next planning meeting is at Jacobs Well with an activity planned for afterwards so please come along if you can. The details are in this edition.

Happy reading *Marie-Louise*

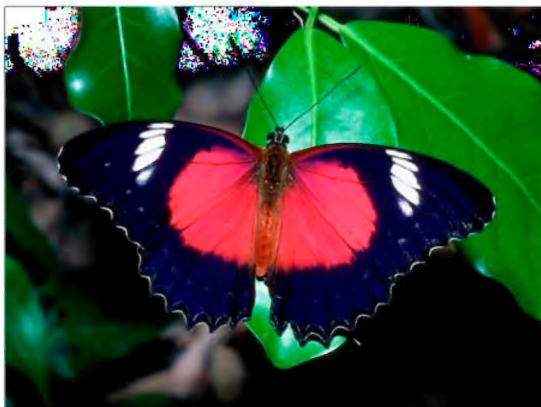
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## The Red Lacewing butterfly (*Cethosia cydippe*) – Garry Sankowsky

This is one of Australia's most beautiful butterflies and I must admit it is my favourite. It is strictly tropical, occurring from Torres Strait to about Townsville, in rainforest where its host plants grow.



The Red Lacewing is rarely seen above 400 m altitude and unfortunately it is a rare visitor to our garden on the Atherton Tableland. Like many butterflies, at times it ranges 50 km or more from its usual breeding areas which brings it on to the Atherton Tablelands and to Townsville. No host plants grow close to Townsville but *Adenia heterophylla* is common on the Cardwell Range and at Crystal Creek (north of Townsville).

It is unfortunate that the last revision of *Adenia/Hollrungia* lumped these species together, sinking the *Hollrungia* genus. I still consider them to be two separate genera and so do the butterflies. The Red Lacewing lays on *Adenia* and *Hollrungia*, the Orange Lacewing lays on *Adenia* and *Passiflora*, refusing to take any interest in *Hollrungia*.



The females almost always lay their eggs along the stem of the host plant, 10 - 20 cm back from the end, in batches of 50 or more. *Adenia* vines usually hang down and then curl up at the tip, the eggs being mostly laid on the curve. I am

referring to the wild situation, in captivity they will lay anywhere on the vine.

Similar to White Nymph larvae, the small caterpillars line up and systematically chew down a leaf. The ones in the image on the right are on *Passiflora* (*Hollrungia*) *aurantoides*. These are about to moult, even if the group is somewhat spread out while feeding they always group tightly when they are preparing to moult.







From the third instar onwards the larvae take on the classic warning colours of toxic species. The group on the left are about to moult and enter the final instar.

The group below are moulting for the last time.



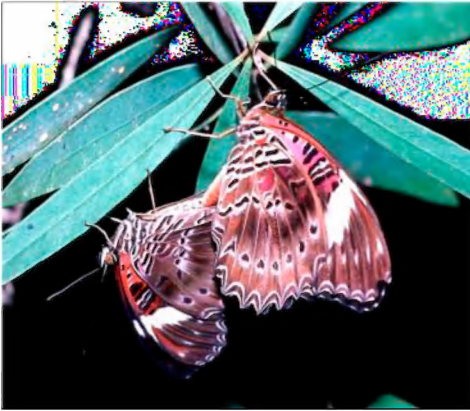
When it comes time to pupate the larvae usually spread out and may end up ten or twenty metres from where they last fed. Like many vine feeding species their pupae are usually not made on the host plant.

The pupae are well camouflaged, looking like some dead debris amongst the foliage.



Male and female butterflies are fairly similar, the males being a more vivid red. When it comes to mating, the males are quite aggressive, similar to a Wanderer as shown in the image below.





This is a very spectacular butterfly when seen flying in the bright tropical sun. They usually rest with their wings open so the bright red is clearly visible.

The wild population is extremely dynamic, fluctuating between very common to extremely hard to find from year to year. There are a few localities in the Wet Tropics where they can almost always be found.

## The Red Lacewing host plants

I mentioned earlier about *Hollrungia* being lumped in with *Passiflora* but *Adenia* is even worse. The official names are *Adenia heterophylla* subsp. *australis* and *Adenia heterophylla* subsp. *heterophylla*. This is complete nonsense, they are totally separate species. The leaves of neither species are heterophyllous (different shaped on one plant) so I have no idea how the name came about. The Queensland Herbarium has all the species on Cape York Peninsula as *Adenia heterophylla* subsp. *australis*, with subsp. *heterophylla* starting in the Wet Tropics. I have never seen subsp. *australis* on Cape York, only the so-called subsp. *heterophylla*. I have these plants growing and there is no doubt what species they are. The main difference between the *Adenias* on the Cape and in the Wet Tropics is the genes; the Cape York ones are about ten times more hardy, enabling them to survive cold and dry much more easily than the ones from the Wet Tropics. It is possible that subsp. *australis* is in Torres Strait as Dennis Bell reported seeing *Adenia* on Thursday Island that had a different leaf from the normal one. For the rest of the article I will be referring to these as *Adenia heterophylla* and *Adenia australis*.



*Adenia australis* flower, buds and green fruit







*Adenia australis* – fruit



*Adenia australis* – foliage

*Adenia australis* occurs from Groote Island around to almost Broome, with surprisingly not large gaps in between so it is intriguing why the Orange Lacewing is not more widespread. It is accepted by the Red Lacewing in captivity but in my opinion does not grow within the range of the butterfly.



This is *Adenia australis* typical habitat in Western Australia (near Kununurra) and in the centre is a huge *Adenia* vine. *Adenia australis* is a deciduous vine that develops a huge tuber, most of which sits on top of the ground. It usually remains leafless from about June till the first storms arrive in October or November, then it sends up fresh stems that rocket up through the trees like “Jack’s Beanstalk”. It is very common in Western Australia but no Orange Lacewings have been found there. I imagine they would once have been there but were wiped out in one of the ice ages.





*Adenia heterophylla* is found from Cape York down to just north of Townsville. Around Bamaga it is quite common and on the Peninsula it extends down to Massy Creek on Silver Plains. The southern population starts at about Mt Webb (north of Cooktown) and then down to Crystal Creek, north of Townsville. It occurs only at very low altitudes, on the Kuranda Range where it cuts out less than half way up.

The plants from the northern population are very hardy and are the only ones that will grow successfully in Brisbane.







*Passiflora (Hollrungia) aurantioides* is a very large vine that in Australia is restricted to the very wet lowlands from about Bellenden Ker to Bingle Bay. No fruit have ever been collected as yet. In spite of the fact that it has a very limited range it is able to withstand the winter in our garden without any problems. The new growth is very soft and relished by both the Red Lacewings and the Cruisers. The plant was originally found in Papua New Guinea.





*Passiflora (Hollrungia) kuranda* ranges from about Bloomfield to the Clohesy River (south of Kuranda) in both lowland and upland rainforest. It is an extremely large vine that develops stems at least as thick as 15 cm and spreads out across the canopy of the rainforest.

The large green fruit do not change colour when mature, nor do they split open. They simply drop to the ground and are opened by various small animals. I have not seen a bird eating the fruit but they do pop up in various parts of our garden.

It was initially thought that there were separate male and female plants but with age all my plants now produce fruit. Initially they only had male flowers.

This vine is used by both the Red Lacewings and the Cruisers.

Photos Garry Sankowsky



## Weird and Wonderful Moths – Graham McDonald

### Introduction

The world of very small and unusual moths often goes unnoticed. Their interesting colours, shapes and patterns only become apparent after taking their images using a good macro lens and DSLR camera. Knowing where to look for them, how to attract them and getting to know their habits and distribution, all help to make this pastime very rewarding. All the images shown here were taken using a hand-held Canon 450D DSLR camera and Canon macro f2.8 100 mm lens or a Tamron SP 60 mm f2 macro lens. All moths were live unpinned specimens with a few in their natural habitat.



Fig. 1 *Moerarchis australasiella*  
Family: Tineidae (Clothes Moths)

This boldly patterned moth feeds on the dead trunks of grass trees (*Xanthorrhoea* spp). Most of the Tineidae family are small and drably coloured, with some ten species feeding on wool, feathers etc.

The common component of all of the larval food materials seems to be the presence of some kind of fungus.

This moth was captured in moist coastal heath on sand where it was flying close to *Xanthorrhoea fulva*. Another moth of the same species was photographed in dry eucalypt forest where it was resting on *Xanthorrhoea johnsonii*.

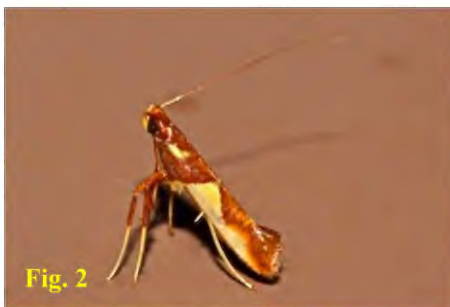


Fig. 2 *Caloptilia xanthopharella*  
Family: Gracillariidae

Gracillariids are usually very small elegant moths boasting bright colours and patterns. They are often less than 7 mm long and go unnoticed by most observers. The wings are usually over 5 times as long as they are broad. Most of these moths rest with the head held high above the substrate and the rear end almost touching the substrate.

The larvae are leaf miners.







Fig. 3



Fig. 4

Fig. 3 *Chrysonoma fascialis*

Family: Oecophoridae, Subfamily: Oecophorinae (a Banded Concealer Moth)

Australia has a greater number of species of these moths than the rest of the world combined. There are over 2,300 named species but there could be over 5,000 species in total.

The majority of Oecophorids feed inside shelters made by tying leaves together with silk, while many feed on leaf litter and scats. The latter group tend to be drably coloured, unlike the species shown here.

This species feeds on *Eucalyptus* spp. and *Lophostemon confertus* (Brush Box). The larvae live in flat cases made from two pieces of leaf joined with silk which is carried around.

Fig. 4 *Neargyria argyraspis*

Family: Crambidae, Subfamily: Crambinae

This is a large family of moths in Australia. They are usually small to medium in size and are often boldly and colourfully patterned.

Note the prominent labial palps held out in front of the head.

This moth was photographed in daylight in simple rainforest near Little Yabba Creek (south-east Queensland).



Fig. 5



Fig. 6

Fig. 5 *Ortholomia moluccana*

Family: Notodontidae, Subfamily: Notodontinae





This rather grotesque looking moth comes to light at night usually in autumn and winter. The colour and shape would suggest that the moth rests on a tree branch during the day. The resemblance to a dead twig would confer protection from predators.

Fig. 6 *Callimima lophoptera*

Family: Oecophoridae, Subfamily: Oecophorinae

This moth is a rainforest species. The larvae live in a communal shelter made from live leaves of the host plants which are *Neolitsia dealbata* (White Bollygum F:Lauracea) and probably *Syzygium australe* (Brush Cherry F:Myrtaceae). Both of these tree species are found in riparian rainforest.

A silk cocoon is constructed inside a rolled piece of leaf that is attached so that it protrudes at right angles to a branch. The moth has been collected in New South Wales and Queensland.



Fig. 7 *Glaucocharis molydocrossa*

Family: Crambidae, Subfamily: Crambinae

This is a small moth with a wingspan of about 16 mm. They rest during the day with wings folded tent-wise above the body and come to light at night.

The labial palps are very prominent and held straight out in front of the head. They are clothed in hairlike scales that give them a brush-like appearance.

This species was photographed in dry rainforest at Heifer Creek (Queensland).



Fig. 8 *Lychnographa heroica*

Family: Geometridae, Subfamily: Ennominae

This striking moth is large and lives in rainforest habitat. The specimen seen here was photographed at Springbrook in the Gold Coast hinterland.

It belongs to a very large family of moths with over 1,273 named species in Australia.

The larvae lack some of the prolegs and so move with a looping gait, giving them the common name of looper moths.





Fig. 9 *Agathia prasinaspis* (female)

Family: Geometridae, Subfamily: Geometrinae

This striking moth belongs to a group of Geometrids known as “emerald moths” due to their mostly green colouration.

This species, like some of the other emeralds, exhibits sexual dimorphism.

The male lacks the brown stripe across the centre of the forewing.

This moth has been collected in New Guinea, Queensland and in New South Wales.

This rainforest species comes to light at night.

Fig. 10 *Niceteria macrocosma*

Family: Geometridae, Subfamily: Ennominae

This is one of the most striking Geometrids, with the common name of Showy Geometrid. The larvae are green with a faint yellow stripe on the lateral areas. They feed on *Eucalyptus* spp. and *Angophora* spp. Their natural range is from the Atherton Tableland to Victoria and South Australia, with records from Tasmania.

The adults are attracted to light and appear in the lowlands of south-eastern Queensland from April to May, in the highlands of south-eastern Queensland earlier in March and in the Granite Belt area in January.



Fig. 11 *Corgatha drosera*

Family: Erebiidae, Subfamily: Boletobiinae



The *Corgatha* spp. are small to medium sized moths with elaborate colours and patterns. Some have a pronounced “hook” on the apex of the forewing. They often rest with the wings held broadly tent-wise displaying the beautiful and intricate colours and patterns of the forewing and most of the hindwing. They are attracted to the light sheet at night. There are about 14 described Australian species.

Fig. 12 *Amerila crokeri*

Family: Erebidae, Subfamily: Arctiinae

This moth belongs to a family of moths with bright colours of white, black, red and yellow. These colours are a warning that they are poisonous or distasteful to predators.

There are about 6 *Amerila* spp. in Australia and they are mostly tropical, with this species extending into northern New South Wales.

All *Amerila* spp. produce a strong-smelling acrid yellow froth when handled roughly. This froth is produced from glands on the thorax near the wing bases. Predators are deterred from eating the moth by this behaviour.

The larvae of *Amerila* spp. feed on the leaves of plants in the families Periplocaceae and Apocynaceae, both of which produce milky latex rich in toxins which affect the heart.



Fig. 13 *Musotima* sp. ANIC1 (*Musotima* sp. aff. *M. suffusalis*)

Family: Crambidae, Subfamily: Musotiminae

This colourful moth belongs to a group of 15 Australian species in the subfamily Musotiminae. Some of these species feed on ferns as larvae.

They are attracted to light, but sometimes fly in daylight.

Most of the 15 species are small with wingspans of about 13mm.

Photos Graham McDonald

## References:

- Common, I. F. B. (1990) *Moths of Australia* Melbourne University Press  
 Herbison-Evans, Don and Crossley, Stella <http://lepidoptera.butterflyhouse.com.au>  
 Zborowski, P. and Edwards, E. D. (2007) *A Guide to Australian Moths* CSIRO Publishing





## Life history notes on the Brown Ringlet, *Hypocysta metirius* (Butler, 1875) Lepidoptera: Nymphalidae – Wesley Jenkinson



The Brown Ringlet, also previously known as the Common Brown Ringlet, is encountered sporadically along the eastern coastal and tableland districts from north-eastern Queensland, along the Great Dividing Range into southern New South Wales. The species is common in south-eastern Queensland.

In Queensland this species is encountered in a range of habitats including upland tropical and subtropical rainforest, wet sclerophyll forest, dry rainforest and eucalypt open-forest with moist gullies and rainforest elements in the understorey. This species doesn't penetrate as far into the dry inland regions as the Grey Ringlet (*Hypocysta pseudirius*).

The adults typically fly along forest margins in dappled sunlight usually within several metres of the ground. They have the typical ringlet 'bobby' flight and while basking their wings are periodically opened and closed quickly, revealing the upper-side colours. Once disturbed they can fly quite rapidly and can be difficult to follow through understorey vegetation. Both sexes feed from a variety of small native and introduced flowers including the exotic Lantana (*Lantana camara*).

Whilst in flight, the adults can be very easily confused with the Grey Ringlet (*H. pseudirius*) and the Orange-streaked Ringlet (*H. irius*), particularly older worn specimens. In comparison to *H. pseudirius*, *H. metirius* is brown rather than brownish grey. The orange patch on the hindwing **upperside** is more defined and brighter with the eyespot also being slightly larger. The hindwing **underside** usually also only has one single silver spot between the two eyespots. The hindwing tornus is also narrower.



Image left: Underside of male *H. metirius* showing single central silver spot between the two larger eyespots.



Image centre: Underside of male *H. pseudirius* showing 2 smaller 'silver' eyespots. N.B. Colour differences between these two species



Image right: *H. irius* with larger eyespots for comparison





In comparison to *H. irius*, *H. metirius* is lacking any orange coloration on the upperside forewing (being the main differing feature), and the two eyespots on the hindwing underside are smaller. *H. metirius* is also generally smaller in size than *H. irius*.

The sexes are quite similar in appearance. In comparison to the males, the females are slightly paler on the upperside and have a slightly broader forewing with the termen more rounded (Braby 2000).

The average size of the specimens pictured is males 30mm and females 31mm.



*Hypocysta metirius* (Brown Ringlet)

Images left to right: male, female, male underside, female underside

A female was collected in April 2011 and was kept in captivity, laid several eggs and was then later released. These eggs were kept for life history studies. Subsequently the larvae were successfully raised in captivity on the native grass Green Couch (*Cynodon dactylon*), a known host for this species.



Freshly laid egg      The eggs were pale green, smooth, off spherical, approximately 0.5 mm in diameter.

The first instars consumed their eggshells shortly after emergence. The larvae were observed feeding solitarily during daylight hours and resting on either side of the leaves of the utilised host plant. Typically like other species in the genus, they were very slow moving and fed from the outer edge of the leaf. Larvae raised completed four instars (similar to *H. irius*, *H. pseudirius*, *H. adiante* and *H. euphemia*). The larvae raised produced two colour forms brown and green as pictured. Although the final instar larval length was overlooked, Braby 2000 states 20mm.



1<sup>st</sup> instar larva



2<sup>nd</sup> instar larva



3<sup>rd</sup> instar larva



4<sup>th</sup> instar green larva form





4<sup>th</sup> instar brown larva form



4<sup>th</sup> instar brown larva head



Pupa lateral view



Pupa dorsal view

A pupa, measuring 12mm in length, was located below a stem of the host plant. It was attached with silk hanging by the cremaster with the head suspended down.

The shortest time from egg to adult was over two months, with egg duration 8 days, larval duration 48 days and pupal duration 15 days. The last adult to emerge was 5 days later.

Within the new boundary of the Scenic Rim Regional Shire south of Brisbane, I have records of adults from October to April. The adults appear to be more numerous during late spring and summer. However, this may relate to the timing of local rainfall triggering fresh growth of the host plants. At this location there are probably two generations per year.

Acknowledgements: I thank my friend and colleague John Moss for commenting on the manuscript.

Photos Wesley Jenkinson

#### References:

Braby, M.F., 2000. *Butterflies of Australia – Their Identification, Biology and Distribution*. vol 2. CSIRO Publishing, Melbourne.

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### **The history of the Australian Anthelidae and notes on separating out some species – Peter Hendry**

The Australian Anthelidae as revised by Edwards and Fairey (1966) in *Checklist of the Lepidoptera of Australia* (herein referred to as The Checklist) contains 73 species in 8 genera in 2 subfamilies (though Edwards and Fairey state 74 species, repeated counts from The Checklist only produce 73) as well as 5 species noted as unplaced. The subfamily Munychryiinae contains 2 genera, *Munychryia* with 2 species and *Gephyroneura* containing only 1 species; while the subfamily Anthelinae contains 6 genera, *Chemuala* with 1 species, *Nataxa* with 2 species, *Chelepteryx* with



2 species, *Anthela* with 56 species, *Omphaliodes* with 1 species and *Pterolocera* with 8 species. Turner (1904) under the genus *Anthela* stated, “A large genus extensively developed in Australia, but not at present known from other regions. It will probably be found in New Guinea, and perhaps from more remote regions”. As predicted and in the same year, Bethune-Baker (1904) named *Anthela ekeikei* from New Guinea. Several species have since been named from there with only two species occurring in both Australia and New Guinea, Edwards and Fairey (1966). There is an image of one unnamed species of *Anthela* on the IBOL web site from Indonesia, though from the island containing West Papua and Papua New Guinea. It must be noted that there are several known unnamed species in Australia and New Guinea.

The first Anthelidae to be named was the Urticating Anthelid *Anthela nicothoe* (Boisduval, 1832) (Fig. 1). It was collected during the voyage of the *Astrolabe*, from 1826 to 1829, through the Pacific Ocean, captained by Jules Dumont d'Urville. *A. nicothoe* could have been named by one of three people. Pierre André Latreille, being a friend of d'Urville, had promised to take care of the entomological part of the voyage but became far too busy in his own work and organized for Jean-Baptiste Lamarck to fill the roll. The untimely death of Lamarck in 1829 put paid to this resolution and the task once again fell to Latreille. Still too busy with his own affairs, Latreille asked d'Urville to appoint another person. Jean Baptiste Boisduval was appointed and in 1832 *Voyage de Découvertes de L'Astrolabe; Lepidopteres* was published containing the original description of *A. nicothoe*. Boisduval's original description placed it in the genus *Bombax* which placed it in the superfamily Bombycoidea, an interesting insight which I will explore later.

The next Anthelidae species to be named was the Batwing Moth *Chelepteryx collesi* Gray, 1835 (Fig. 2). Gray also raised the genus *Chelepteryx* as a sub genus to *Endromis* which is now in the family Endromidae and not found in Australia. At the time this placed it in the superfamily Noctuoidea. The specific name *Collesi* was named in honour of Mr Colles who had brought several specimens to Great Britain. In 1839 Joachim François Philibert Feisthamel named *Saturnia laplacei* (now a synonym of *Chelepteryx collesi*), thereby creating the first of many synonyms to come. This was followed by the naming of *Pterolocera elizabetha* (White, 1841). It had been collected during the expeditions into Western Australia by Captain George Grey, who later became Governor of South Australia. The description by White was published in the appendix to Grey's journal. White originally placed it in the genus *Odonestis*, a genus in the family Lasiocampidae, which is in the superfamily Lasiocamoidea, though at the time it may still have been regarded as a member of the superfamily Bombycoidea, as Harris only raised the superfamily Lasiocamoidea in the same year, 1841.

In 1855 Francis Walker raised the genera *Nataxa*, *Anthela*, *Darala* (now a synonym of *Anthela*), *Megethna* (now a synonym of *Chelepteryx*) and *Pterolocera* in





the family Liparidae (now a synonym of Lymantriidae in the superfamily Noctuoidea).

**Nataxa:** Walker unsure of the genus first named the Nataxa Moth, *Perna? flavescens* (Fig. 3) (*Perna* is now a synonym of *Pernattia* in the family Lasicampidae), he then raised the genus *Nataxa* and placed in it *N. flavifasica*. Swinhoe (1903) as first reviser placed *Perna? flavescens* in *Nataxa* and *N. flavifasica* became a synonym of *N. flavescens*.

**Anthela:** When Walker raised *Anthela* he placed in it just one species, the Rusty Anthelid, *A. ferruginosa*.

**Darala:** Walker created twelve sections under the genus *Darala* and placed in it twenty four species, twenty two being new. The two previously named species Walker placed in *Darala* were, White's *Odonestis elizabetha* (now *Pterolocer elizabetha*) and Boisduval's *Bombax nicothoe*. However in the case of *nicothoe* he described a male under the name *Darala adusta* and placed a description of Boisduval's female *Bombax nicothoe* under it, almost in synonymy. This was qualified by placing a question mark after *Bombax nicothoe*. Today it is known as *Anthela nicothoe* with *Darla adusta* as a synonym. Of the twenty four species Walker assigned to *Darala*, today only twelve are recognized as species in the Anthelidae. His *Darala reducta* is now *Leptocneria reducta* in the family Lymantriidae and *Darala falcata* is now *Periga falcata* which is in the family Saturniidae and is not Australian. The remaining ten, not recognized as *Anthelia* species are all synonyms of various species. As an example, under his section 2 Walker described 8 species, the Common Anthelid, *D. acuta*, *D. excisa*, the Varied Anthela, *D. varia*, *D. conspersa*, *D. ferrugine*, *D. simplex*, *D. plana* and *D. parva*, today only 2 remain the Common Anthelid, *acuta* and the Varied Anthela, *varia*, both now in the genus *Anthela*. Of the others, 4 are synonyms of *A. acuta*, *D. excisa*, *D. conspersa*, *D. simplex* and *D. plana*. *D. ferrugine* is now a synonym of *D. subfalcata*, from Walker's section 5 and *D. parva* is now a synonym of *Anthela ferruginosa*. Walker did point out under *D. excisa* that it may be a variety of *A. acuta* and under *D. plana* that it may be a variety of *D. simplex* (as stated now a synonym of *A. acuta*). Confusing as this all is *A. acuta* also has 3 other synonyms, *D. quadriplaga* (Walker, 1862), *Ennomos potentaria* (Walker, 1863) and *D. delineate* (Walker, 1865); while *A. varia* has 5 synonyms one *D. hamata* (Walker, 1855) is from Walker's section 5 of his *Darala*. The others include *Colussa odenestaria* (Walker, 1860), *D. pinguis* (Walker, 1865), *Eulophocampe amoena* (Scott, 1893) which was really only a manuscript name as Scott died before it was published in his second volume of *Australian Lepidoptera and their Transformations*. A.S. Olliff and Scott's daughter, Helena Ford, published the book as editors and as such updated the names to their current status. As Scott's name, *Eulophocampe amoena*, appeared on the drawing they were shown as synonyms in the text (this was pointed out in The Checklist) and the final synonym of *A. varia* is *A. humata* (Turner, 1921), a misspelling of Walker's





*D. hamata*. I have not found any reference to Walker's sections since his original description of *Darala*. In summary, in 1855 Walker placed 24 species in his genus *Darala*. Today 2 are not recognized as being in the family Anthelidae, 1 is in the genus *Pterolocer*, 10 are synonyms of various species in the genus *Anthela*, leaving 11 species, now all recognized in the genus *Anthela*. These species are *A. acuta* and *A. varia*, as seen above, the Western Anthelid *A. canescens*, *A. cinerascens*, the Day-flying Anthelid *A. connexa*, the Grey-headed Anthelid *A. excellens*, *A. inornata*, the Eye-spot Anthelid *A. ocellata* (Fig. 4), the Postica Anthelid *A. postica*, the Replete Anthelid *A. repleta*, and *A. subfalcata*.

**Megethna:** The genus *Megethna* was raised and sunk at the same time. Walker used the name *Megethna* in a *Synopsis of Genera* to the family Liparidae (now Lymamtriidae). In the body of the work he used the name Chalepteryx (a misspelling of the genus Chelepteryx, which we will explore later) and noted “*the above name (Chalepteryx [sec]) having been given to the genus, that of Megethna, by which it is distinguished in the Synopsis, must be cancelled*”.

**Pterolocera:** When Walker first raised *Pterolocera* he placed in it one species, *P. amplicornis*. At the same time Walker also named *Trichiura obscura* (now *Omphaliodes obscura*) (Fig. 5). *Trichiura* is a genus in the Lasiocampidae.

In the same year, 1855, Dr Gottlieb August Wilhelm Herrich-Schäffer raised the genus *Ommatoptera* (now a synonym of *Anthela*) and named *Laelia australasiae* (now a synonym of *Anthela nicotthoe*).

In 1856 Edward Newman named The Toothe Antelid, *Teara denticulata* and the Eight Spotted Anthelia, *T. guenei* (Fig. 6) both are now in the genus *Anthela*. The genus *Teara* is in the family Notodontidae. In the same year Herrich-Schäffer named *Ptilophora insignis* (now *Pterolocera insignis*) (Fig.7), *Ommatoptera diophthalma* (now a synonym of *Anthela repleta*) and *O. tetraphthalma* (now a synonym of *A. ocellata*).

Between 1858 and 1863 several synonyms were created by Walker, Herrich-Schäffer and Hans Daniel Johan Wallengren who raised the genus *Festra* and placed in it *F. affabricata* (now a synonym of *Chelepteryx collesi*). The only species remaining from this period is shown in The Checklist as unplaced, being, ? *directa*, named by Walker in 1862 in his 1860 genus *Colussa* (now a synonym of *Anthela*). In 1865 Walker named eight more species in his genus *Darala*, only four remain as species, including the Western Toothed Anthelid *Anthela basigera* (Fig. 8), the rest are synonyms of other species. At the same time he raised the genus *Munychryia* and placed in it one species, the Grey Anthelid, *M. senicula* (Fig. 9). The same year he also named *Nataxa rubida*, now a synonym to *N. flavescens*. The years 1866 to 1872 saw seven more synonyms created by Walker and Gabriel Koch. The naming of *Arnissa simplex* (now a synonym of *Anthela addita*) by Walker in 1869 was the last entry into the Anthelidae by him. He passed away on the 5<sup>th</sup> Oct 1874.



In 1874 Arthur Gardiner Butler named *Darala limonea* (now *Anthela limonea*) and Rudolf Felder raised the genus *Omphaliodes* into which Walker's *Trichiura obscura* was placed in The Checklist. Felder (1874) also named the White Stemmed Gum Moth, *Chelepteryx chalepteryx* (Fig. 10), placing it at the time in Walker's genus *Darala*. As mentioned earlier Walker misspelt the genus *Chelepteryx* as *Chalepteryx*. In 1904 Turner believed Felder was following this misspelling thus making the specific name *Chelepteryx*, and as he was referring it to the genus *Chelepteryx* making it congeneric, he declared it necessary to change the specific name and called it *Chelepteryx felderi*, after its author. Today the name *Chelepteryx chalepteryx* stands, with Turner's *C. felderi* as a synonym. It must be noted that Koch named this species in 1872 as *Chalepteryx kochii* but the name was declared *nomen nudum* which implies it does not have a description and fails to conform to Article 12 of the International Code of Zoological Nomenclature. Felder, in 1874, also named *Anthela rubeola*, placing it in Walker's genus *Darala*. He named several other Anthelidae species, now all synonyms, and in 1875, in conjunction with Alois Friedrich Rogenhofer, named *Hypochroma nyssiata* (now a synonym of *Munychryia senicula*).

In 1882 Butler named *Anthela stygiana* (Fig. 11), placing it in Walker's genus *Darala*. 1885 saw Rudolph Rosenstock name *Colussa vinosa* which is now a synonym of *Anthela addita*. In 1890 Johann Gottlieb Otto Tepper named *Opsirhina tintinnarra* (now a synonym of *Anthela canescens*). 1891 saw Edward Meyrick and Thomas Pennington Lucas at work, Meyrick naming *Anthela asterias* (Fig. 12), *A. protocentra* and *A. xantharcha* placing them in Walker's genus *Darala*. He also named the Rose Anthelid, *Chenuala heliaspis* (Fig. 14) using the generic name *Ocneria* which is in the family Lymantriidae. Lucas named *A. asciscens*, *A. linearis* and *A. rubriscrita*, placing them all in Walker's genus *Darala* and at the same time he created several synonyms.

In 1892 Colonel Charles Swinhoe, in his *Catalogue of eastern and Australian Lepidoptera* vol. 1, raised the genus *Chenuala* and placed in it one species *C. rufa* which is now a synonym of *C. heliaspis*. It was Turner (1922) who placed Meyrick's *Ocneria heliaspis* in the genus *Chenuala*. Swinhoe also raised the genus *Newmania* and placed in it Newman's *Teara guenei*. Swinhoe (1892) also created several synonyms and played with Walker's genus *Darala* placing many of them in Walker's 1860 genus *Colussa*. Also in 1892, Oswald Bertram Lower named *Darala ochroptera* and *D. macrota*. *D. ochroptera* is now in the genus *Anthela* while *D. macrota* is one of the five species listed in The Checklist as unplaced. In the same year Lower and William Forsell Kirby created two more synonyms.

1893 was the year Alexander Walker Scott's *Australian Lepidoptera and their Transformations* Vol. 2 was published, with Olliff and Ford as editors and for the reason explained above his synonym of *A. varia* was created. This publication also



created the synonym *Chelepteryx expolitus* of *Chenuala heliaspis*. In the same year Lower created two more synonyms.

In 1895 Lucas named *Darala reltoni* (now in the genus *Anthela*) and in 1898 he named *Darala maculosa* and *D. trisecta*, both of which now sit in The Chicklist with those species listed as unplaced. In 1902 Swinhoe named *Darala adriana*, *D. clementi*, *D. pudica* and *D. rubicunda* (now in the genus *Anthela*). At the same time he created the synonym *D. figlina* of *Anthela exoleta*. In the same year Lower named *Darala callixantha* and *D. heliopa* (now in the genus *Anthela*). 1902 was also the year that Alfred Jefferis Turner entered the fray, he named *Anthela phoenicias* (Fig. 13) and *A. neurospasta*. At the end of his description of *A. phoenicias* he states, “*Anthela* (type *ferruginosa*, Wlk, iv, 854) includes and supersedes *Darala* (type *ocellata*, Wlk, iv, 887.)”, the Wlk iv, 854, refers to Walker, his volume iv of his *List of specimens of lepidopterous insects in the collection of the British Museum* published in 1855 and the number following being the page number of the specific description. Turner has recognized *Anthela* and *Darala* as the same genus and as such has chosen *Anthela*, published first on page 854, over *Darala*, published on page 887, (making *Darala* a synonym of *Anthela*). In spite of the fact *Darala*, as can be seen above, was widely used by several authors, Turner stuck with what was published first. In 1902 Turner also named *Anthela aspilota* which is now a synonym of *Anthela phoenicias*.

In 1903 Swinhoe published a paper titled, *A Revision of the Old World Lymantriidae in the National Collection* (British). He follows Turner and leaves *Darala* as a synonym of *Anthela*. He also made Walker’s 1860 genus *Colussa* (into which he previously placed several *Darala* species) and his own 1892 genus *Newmania*, synonyms of *Anthela*. At the same time he also declared Butler’s 1886 genus *Leptocneria* to be a synonym of *Anthela*. Today *Leptocneria* is a genus in the family Lymantriidae. In the same paper he named *Anthela ostra* and *A. unisigna* and created four more synonyms.

In 1904 Turner took the first steps in separating the Anthelidae from the Lymantriidae. In his paper *A Classification of the Australian Lymantriidae*, he raises the subfamily Anthelinae with *Anthela* as the type genus. He based this on, “the very peculiar structure of the areole of the forewings, and usually also by the wide separation of vein 8 of the hindwing from the cell”. He expanded on this in 1920 as we shall see later. In 1904 Turner also named *Anthela achromata* and created the synonym *Anthela symphona* of *Anthela ocellata* and the synonym *Chelepteryx felderi* which we explored earlier.

The years 1905-1917 are rather unremarkable in that only one species was named, *Anthela callispila*, Lower, 1905 and Turner raised the genus *Aprosita* now a synonym of *Omphaliodes* while between them J. Malcolm Fawcett, Karl Grünberg, Lower, Swinhoe and Turner created 11 more synonyms.





On the 15<sup>th</sup> October 1919, Turner's paper *A New Family of Lepidoptera, the Anthelidae* was read to the Entomological Society of London and published in its Transactions on the 15<sup>th</sup> January 1920. Within the paper Turner expands on "the very peculiar structure of the areole", he illustrated the venations of the Lymantriidae species *Laelia obsoleta* and those of *Anthela ferruginosa* and stated "The accompanying figure [(fig1)] shows the neuration of one of the more primitive genera of the Liparidae. [Lymantriidae] It will be noted that it shows the presence of an areole typically formed, from which arise vein 10 by a separate stalk, and 7, 8, 9 by a common stalk. This structure occurs also in other families, such as the Arctiidae, Noctuidae, Notodontidae, and Geometridae. Compare with this the neuration of *Anthela ferruginosa* Wlk. (fig. 2). The peculiarities of the areole are at once apparent. This is very elongate, all the veins 7, 8, 9, 10 arise from it separately, and a triangular portion at the apex appears to be cut off by a cross-vein". He also noted that the triangular portion was not always evident. I have reproduced Turner's (fig. 2) here as Fig. 18, and have shown the mostly numeric notation Turner used in 1920 in grey, along with the more modern alpha-numeric notation he used in his 1946 paper, *A Revision of the Phylogeny and Classification of the Lepidoptera*, in blue. In his 1920 paper he also raised the genus *Gephyroneura* and misspells the genus *Munychryia* as *Munychryta*.

In 1921 Turner produced a paper titled *Revision of Australian Lepidoptera – Hypsidae, Anthelidae* in which he cements the Anthelidae and places in it the following genera, *Chelepteryx*, *Pterolocera*, *Nataxa*, *Aprosita* (now a synonym of *Omphaliodes*), *Gephyroneura* and *Munychryia*. Today the genera of Anthelidae are as stated by Turner in 1921, with the exception of *Aprosita* being a synonym of *Omphaliodes* and the inclusion of *Chenuala*, which he included in 1922. Of note and as can be seen from above, Turner (1921) under the genus *Anthela* states, "I recognise 40 species, of which 11 are here described for the first time. Deducting these, there remain 29 species, which have received no fewer than 87 names. This excessive synonymy is due to the great variability of many of the species not having been previously recognised. The sexes often differ, sometimes considerably, in colour, wing-shape, and distinctness of marking. Apart from sexual differences, many species vary much in colour, and in the development of lines on the wings; in some examples these may be very distinct and characteristic, in others of the same species they may be completely obsolete". Of his 11 new *Anthela* species, 2 are now recognized as synonyms. He also more formally raised the genus *Gephyroneura* and named in it *G. cosmia*. At the same time he again misspelt *Munychryia*, this time as *Munichryia* and as pointed out above misspelt the *Anthela varia* synonym *hamata* as *humata*. Turner's 1921 paper *Revision of Australian Lepidoptera – Hypsidae, Anthelidae*, as pointed out in The Checklist, is the most useful for Australian lepidopterists and we will explore it further when we look at separating out some species.

In 1922 Turner described 3 more species in the genus *Anthela*, while Swinhoe went on a bit of a misspelling spree, misspelling 2 genera and 2 species and created a synonym of *Pterolocera ferrugineofusca*. Between the years 1924-1939 Turner



named 6 more species in the genus *Anthela* and created 4 more synonyms. In 1944 Turner named his last Anthelidae. He raised the genus *Aprosepta* (now a synonym of *Nataxa*) and placed in it *A. amblopis* (now *Nataxa amblopis*). This species seems to have a very limited distribution. It was described from a single specimen collected by Jack Macqueen on his farm at Milmerran. Turner states it was collected in January, and as he named it in 1944 it is an assumption on my part that he means January 1944. I have only found records of two other specimens, a female collected in 1950 and a male in 1957, both collected by Macqueen at Milmerran. Turner's last foray into the Anthelidae was to list the family in the superfamily Noctuoidea in his 1946 paper *The Phylogeny and Classification of the Lepidoptera*, in which he also illustrated the venations of several species. Turner passed away on the 29<sup>th</sup> December 1947. Embrik Strand was the only other author to add to the Anthelidae during this period. In 1925 he named *Pterolocera ferruginea* and *P. ferrugineofusca*. For the astute you may have noticed *P. ferrugineofusca* was named in 1925 while earlier I stated Swinhoe created a synonym of *P. ferrugineofusca* in 1922. This fact is pointed out in The Checklist. Walker (1855) in his description of *P. amplicornis* describes a variety  $\gamma$ , his Latin version reads in part; Var.  $\gamma$ . Var.  $\beta$  similis; thorax ferrugineofuscus ..... Swinhoe misread this as a synonym *P. similis* and published it as such. Strand then gave the name *P. ferrugineofusca* to Walker's variety  $\gamma$ . The only other thing to happen between 1922 and 1947 was several authors created several more synonyms.

The last Anthelidae species to be named was *Munychryia pericylta* by Ian Francis Bell Common and Noel MacFarland in 1970. At the same time they raised the subfamily Munychryiinae and placed in it the genera *Munychryia* and *Gephyronneura*.

The placement of Anthelidae to superfamily has had many incarnations throughout the years. The first named species was placed in the genus *Bombax* which placed it in the superfamily Bombycoidea. Walker moved it to his genus *Darala* in the family Lymantriidae superfamily Noctuoidea. Turner had treated the Anthelidae as a member of the superfamily Noctuoidea, while Common treated them as a member of the Bombycoidea and in *Insects of Australia*, 1970, stated his reason as being “the absence of tympanal [hearing] organs at once distinguishes it from the Noctuoidea”. While Turner (1946) recognized the superfamily Lasiocampoidea with the one family Lasiocampidae other Australian authors, Common (1970), Common (1990), Edwards and Fairey (1996), Zborowski and Edwards (2007) and Marriott (2008), all listed Lasiocampidae within the Bombycoidea. However, Minet in 1994 included Anthelidae with Lasiocampidae in the Lasiocampoidea, Edwards and Fairey (1996) and was recognized as such by the British Natural History Museum and others. Zwick, Regier, Mitter and Cummings (2010) in their paper *Increased gene sampling yields robust support for higher-level clades within Bombycoidea (Lepidoptera)*, state, “The family Anthelidae (Lasiocampoidea) is reincluded in the superfamily Bombycoidea”.



## A look at separating out some species:

Turner's 1921 paper *Revision of Australian Lepidoptera-Hypsidae, Anthelidae* is available on line at

<http://www.biodiversitylibrary.org/page/3785225#>

As Turner (1921) pointed out there is great variability among some species and some extreme examples of sexual dimorphism (see *Chemuala heliaspis* (Fig. 14)). The Checklist also notes there are several species complexes, in which more than one species may be involved. These include *Anthela repleta*, *A. varia*, *A. canescens*, *A. excellens*, *A. astata*, *A. acuta*, *A. pyrrhobaphes* and others. Turner (1921) gives a key to the genera of the Anthelidae and a key to the large genus *Anthela*, in which he states, "Owing to the variability of some of the species the following tabulation must be used with caution". It must also be noted that the synonymy used by Turner and that in The Checklist varies, e.g. Turner's *A. varia* lists as synonyms, *Darala integra*, *D. humata* [sec], *D. pinguis*, *D. latifera*, *D. caniceps*, *D. limonea*, *D. succinea*, *D. scortea*, *Colussa odenestaria* and *C. uvaria*, while The Checklist treats *D. limonea* as a species in its own right (*Anthela limonea*), *D. latifera*, *D. succinea* and *D. scortea* as synonyms of *A. canescens* and *D. integra* and *D. caniceps* as synonyms of *A. excellens*, so even more cautions needs to be used. However there are many useful tips within Turner's work. I have had problems with differentiating between some specimens of *A. varia* and *A. acuta*. Though *A. varia* is generally bigger, there is a point where a small *A. varia* is similar in size to a large *A. acuta* and if trying to identify an image, size is impossible to gauge. Turner points out that the discal spots on the forewings of *A. acuta* are white-centred (Fig. 15), at least on the underside while in *A. varia* they are not (Fig. 16). This brings up another problem with images, you may not be able to see the underside.

One species I have seen misidentified over the years is *Anthela excellens* but as pointed out to me by Ted Edwards and I have since read in Turner's 1921 paper, it is easily identified by the fact it has a grey head (Fig. 17) which contrasts with its overall colour. It also has a greyish area near the apex of the forewing which can be hard to distinguish in worn specimens. Separating *A. repleta* from *A. acuta* is done by the fact that in *A. repleta* the postmedian line in the forewing is crenulated (scalloped).

I am only a student of the Anthelidae and have recently been indebted to Ted Edwards for identifying three of my specimens. Two belong to the *Anthela astata* complex which differed from each other by one having prominent dark discal spots on each forewing which on the underside contain some whitish scales while the other specimen has two hardly discernible white discal spots on the upper surface of each forewing which on the underside are darkish with one of each pair containing whitish scales. The other specimen Ted identified for me was a known unnamed *Anthela* species.





**Miscellaneous Notes:** Marriott 2008, points out that there is only one known specimen of *Anthela allocota*. It was possibly collected between 1860 and 1890 but not named until Turner named it in 1921. Marriott states “*It may be an aberrant specimen of another Anthelid or indeed the sole example of a species which is rarely seen or extinct*”. The genus *Pterolocera* is one in which I have had no experience and appears to have many unnamed species. Marriott 2008, notes “*Pterolocera in Victoria are apparently all without names. Because the female are flightless [in most species] sedentary colonies form and this may have been a factor in the development of many species*”.

The common names used herein are from Marriott 2008.

In preparing this article I am indebted to Christine Lambkin and Margaret Greenway for the retrieval of some historical papers and to Ted Edwards for his help in identifying some of my specimens. I am also very grateful to the Biodiversity Heritage Library which has placed so many of the early publications on line.

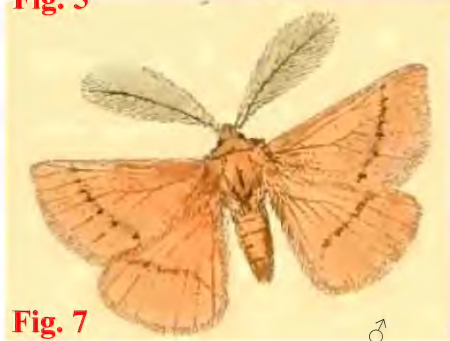
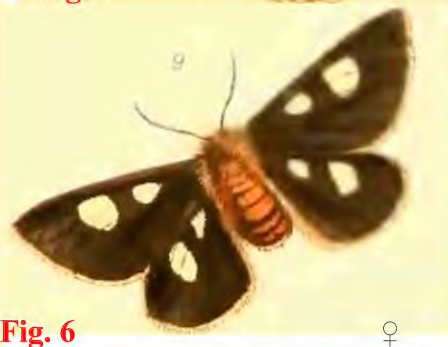
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**Fig. 9**



**Fig. 10**



**Fig. 11**



**Fig. 12**

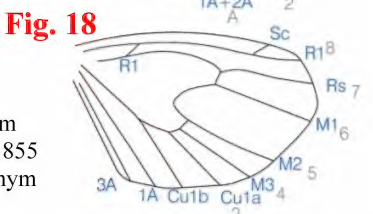
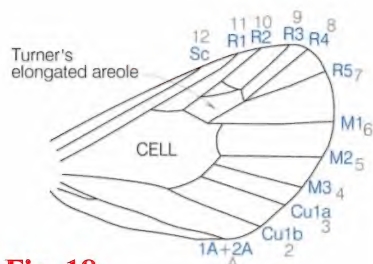


**Fig. 13**



**Fig. 14**





Photos Peter Hendry

Fig. 1 *Anthela nicotloe* as depicted under the synonym

*Laelia Australasia* by Herrich-Schäffer in 1855

Fig. 2 *Chelepteryx collesi* as depicted under the synonym

*Saturnia laplacei* by Feisthamel in 1839

Fig. 3 *Nataxa flavescens* as depicted under the synonym *Dicreagra ochrocephala* by Felder in 1874

Fig. 4 *Anthela ocellatas* as depicted under the synonym *Ommatoptera tetophthalma* by Herrich-Schäffer in 1856

Fig. 5 *Omphaliodes obscura* as depicted under the synonym *O. nana* by Felder in 1874

Fig. 6 *Anthela guenei* as depicted as part of the original description by Newman in 1856

Fig. 7 *Pterolocera insignis* as depicted as part of the original description by Herrich-Schäffer in 1856

Fig. 8 *Anthela basigera* as depicted under the synonym *Darala undulata* by Felder in 1874

Fig. 9 *Munychryia senicula* as depicted under the synonym *Hypochroma nyssiata* by Felder & Rogenhofer, 1875

Fig. 10 *Chelepteryx chalepteryx* from the original description by Felder in 1874

Fig. 11 *Anthela stygiana*

Fig. 12 *Anthla asterias*

Fig. 13 *Anthela phoenicias*

Fig. 14 *Chenuala heliaspis*

Fig. 15 *Anthela acuta*, white-centred discal spots

Fig. 16 *Anthela varia* discal spots

Fig. 17 The grey-headed, *Anthela excellens*

Fig. 18 *Anthela ferruginosa* wing venations



## New Noctuidae web site – Peter Hendry

I have just received an email from Len and Gail Wellin. Len is the man responsible for all the images on the CSIRO Australian Moths on Line website, found at <http://www1.ala.org.au/gallery2/main.php>

Len and Gail have sent a link to a German web site by Bernd Schacht which contains an Australian section with images of moths in the families Herminiidae and Noctuidae.

Set out in the format of the Checklist of the Lepidoptera of Australia, 1966, it does not take into account recent studies which have placed many of the Noctuidae into a new family Erebiidae. The images on the site are mostly all of specimens housed in the Australian National Insect Collection and each species may have several images. There is an alphabetic list of genera and a list of subfamilies. A page viewed through the subfamilies shows the genus and author as a heading followed by images of each species in the genus. Hovering the mouse over an image will cause the specific name and author to be displayed. Clicking on the image will bring up a page with one or more images of the species, along with its name, author and wingspan. It must be noted that not all species are imaged, in fact several complete genera are missing images. In spite of this shortfall the reliability of this site will make it the “go to” place for those trying to identify specimens from the Herminiinae or Noctuidae.

I am very grateful to Len and Gail for providing a link to this site.  
<http://www.noctuidae.de/page/hauptseite/index.html>

### BOOK REVIEW

***‘Butterflies of Coastal SEQ. An Identification Guide*** by Trevor Ford’.  
Platypus Graphics, Stafford, Brisbane, Qld. (Printer), 2012 (No ISBN). Limited copies are available from Customer Service, at Sunshine Coast Council  
Ph. (07) 5475 7272

Reviewed by *K.L. Dunn*



With the ease of digital photography nowadays, there has been an unprecedented increase in the availability of quality photos of our fauna in various productions and especially online. No doubt, this has raised public awareness of our faunal diversity and it reminds us that we share this world. Indeed, we share it not just with furry animals (which gather more endearment), but with a multitude of small creatures too, including butterflies. Because land in coastal regions of Australia is under growing pressure from human enterprise, butterflies (and other wildlife not so obvious and perhaps less colourful) are usually out-competed except in those few reservations





sparingly preserved as examples of the original habitat. In many new residential estates, artificial lawn-grass (which requires no upkeep) is now replacing frontage lawn, which increasingly limits that remaining space utilised by a multitude of ground dwelling invertebrates (and grass-feeding garden skippers too). The author, Trevor Ford, hopes to raise awareness of the need for shared butterfly-space in coastal southeastern Queensland (SEQ). He trusts his booklet will encourage affirmative action so that the local butterflies “can again prosper” in urban and residential areas where they now struggle to retain much ground. This he suggests can be achieved by: (1) planting native larval hosts and nectar producing flowers for adults; (2) providing a moist environment and access to water during dry seasons; (3) limiting further clearance of any remaining native vegetation; and (4) restricting the use of herbicides and insecticides. Whether they will prosper in a shared environment, as hoped for, may become the responsibility of future generations to enable; yet if young children can access this booklet from their school ‘nature table’ (to see what they may be losing) then that alone may be an important step forward.

Ford’s pocket-sized booklet on the butterflies of the coastal region of southeastern Queensland covers the Sunshine Coast, Moreton Bay, Brisbane, Redland and Gold Coast shires. A map outline of the shire boundaries is inside the cover and clarifies the area involved. The Introduction explains the booklet succinctly. The main text documents each of the 90 species found regularly in the region with their status, noteworthy aspects of behaviour, their habitat requirements, and their larval host plants as the focus. The work would be amiss without showing the lifecycle, and the Glasswing illustrates this, presented opposite the Contents page. One or more photos of the adult stage, along with four commonly seen day-flying moths, illustrate each of the species chosen for inclusion. The four moths usefully inform the novice who might mistake them, because of their showiness, for butterflies. Yet, some taxonomists may argue that butterflies are just several groups of ‘pretty moths’ anyway! Indeed, many who glance through nature books often think that the Skippers, especially the Flats, look very like day-flying moths (and some do turn up at lights too). As the text reminds, it is merely a set of guidelines that separate moths from butterflies “rather than hard and fast rules”, so no need to worry too much if the butterfly-moth dilemma seems a little blurred. The booklet of 72-pages closes with an index of common names (not Latin names), Acknowledgements and Further Information. The Acknowledgements list five references from where the author likely sourced some information (and two named butterfly specialists “provided a tremendous amount of expert advice...” which would have enriched the text); the References Works could usefully serve as further reading for the keen enquirer. (Note that for the final reference, the surname ‘Kitchen’ is a misspelling of Kitching.)

The booklet provides a pictorial guide intended to enable identification of those species presented, as well as depicting the local diversity, and that part of Queensland is a well-endowed area of the country. Many butterflies are shown in the wild (which I prefer), and others are in ‘postcard style’, which provide plain backgrounds for



greater contrast. Each style is artistically acceptable (none shows pinned (dead) specimens distastefully placed on ornamental flowers) and uplifts the magnificence of their forms, and because of that, the photos will appeal visually to many readers too. A small number of butterflies appear in wild situations that do not quite ring true to usual field experience though. For example, the images of *Delias nigrina* on the ground rather than on foliage is unusual (except at streams and soaks), and the stance of the male *Papilio aegeus* on a flower is awkward, with its forelegs tucked up, each a little unnatural. Nonetheless, all photos are sharp (except for the *Melanitis leda* in basking stance – it is a stunning adult nonetheless, and such a basking event is uncommonly seen) and the colours are accurately reproduced throughout. Even children wishing to learn about colourful butterfly visitors to their gardens will readily recognise many species using it.

The text is clear, concise and correct; it gives the adult sizes, often describes their flight, and informs readers as to whether the species are common or localised etc. (I am not keen on the use of ‘local’ which dates from early butterfly literature as it seems grammatically peculiar, but it is an idiosyncrasy of butterfly writings). The text also describes the habitats favoured by each species and lists host plants by both common and technical names. It includes occasional interesting snippets too; the similarity between the Regent Skipper and the Joseph’s Coat Moth will be intriguing to many budding naturalists – the upperside of the moth resembles the underside of the butterfly – and this curiosity will provoke young readers to ponder over the remarkable mysteries of mimicry.

To encourage use by the casual naturalist and garden observer alike (for whom it is intended), the booklet highlights the common names (usually contemporary, but some older favourites receive mention too) with technical names alongside. The arrangement of species is in traditional Family order. It starts with the ‘Skippers’ and ends with the ‘Blues’, rather than on the overall colours and patterns of the species and their similarities to one another (which might have been better). The majority of photos of each species are very high quality and most, if not all, look very much alive. A likely reason for this excellence is that the author has ‘bower-birded’ images from about 14 other observers, who supportively offered their photos for this booklet to ensure that only the best pictures dignify the pages. This collaboration is commendable, and one to be encouraged, but I think that the publication script should have stated (in fairness to all), that photographers retain copyright of their own photos; page 2 would suggest otherwise, perhaps). Nonetheless, all contributors should feel proud for supporting this educational project, as conceived by the local Councils who funded it.

This booklet almost made it to the finish line – all photos are correctly identified as the species stated except for the one, nicely photographed by Geoff Walker, on page 63. The booklet author had selected that beautifully poised adult, presented in its immaculate condition, as an example of *Theclinesithes miskini*. The adult illustrated is,



in fact, *Catopyrops florinda*, and based on the colour tones of the underside, closely matches the subspecies *estrella*, from northern Australia. A quick email-check with the photographer (who has a webpage of his photos) confirmed that the butterfly indeed came from the tropics, namely Darwin city, Northern Territory (G. Walker p.c.). The characteristic whitish underside distinguishes the southern subspecies, *halys* (illustrated on p. 61), from its tropical counterpart. And, since all populations of this butterfly in the Northern Territory belong with subspecies *estrella*, adults matching the one illustrated do not occur in the region covered by the booklet.

Ford's contribution will better enable those residents in SEQ who wish to identify many of the common and prominent butterflies in parks, gardens and local reserves. Obviously, for some species, a little more experience will be required for certain identifications within some complex groups; but it will help the learner seek out similar species from other texts with which to compare the ones they have seen, as they grow in self-efficacy or mastery. It deserves a welcomed place in every Primary and Secondary School library in the region, and I hope that sufficient numbers were printed should that demand be realised.

## REPORT

### **Lammermoor Beach - Butterfly, and Tree Planting, morning –**

*David St. Henry*

I was invited to speak about butterflies at the 'Friends of Lammermoor Native Gardens' inaugural event, which also included some tree planting and a sausage sizzle. Lammermoor is just south of Yeppoon on the central Queensland coast. The native gardens there are mainly tea-tree swamp with riparian vine thickets. It is great that this pocket of native vegetation is now protected and looked after. The group had ordered some great material from BOIC and I had organised to bring my net, butterfly books and various larvae and pupae. We had about 60 people turn up and we handed out a lot of booklets and a few membership forms. The weather was perfect with lots of butterflies out.



I started my talk about butterflies around 8am and had some Orchard Swallowtail larvae and chrysalids to show. I talked about the wonders of the insect world including; different local species; poor survival rate in the wild and how to boost it by rearing larvae indoors; over wintering (there was a big Blue Tiger/Crow site amongst







the paperbarks); effects of the recent extremely destructive cyclone Marcia, (and the likely BIG season of butterflies in the following spring due to massive new growth and the canopy being shredded thus allowing more plant species to germinate.) They were happy to hear that! (Incidentally, I caught one Blue Tiger that had obviously survived the cyclone – its wings were shredded and reduced to nearly 1/2 of normal size – it was like a pre-schooler had tried to cut along the black veins!) I also talked about butterfly scales; old wives tales; sightings of the Ulysses butterfly 30km north at Byfield; some evolution defying ant/larvae relationships (heaps of bright Oak-blues and Green Tree Ants around to show); talked about metamorphosis and the impossibility of evolution to explain how it came about and how this exquisite design points to a Creator. Bernard d'Abrera puts it more clearly, *'the implications for those who continue to wishfully think that butterflies came by accidental and mindless evolution are profoundly embarrassing. The butterfly is not simply the winged adult, but an unbreakable composite of four morphologically distinct creatures, all performing to a preset pattern of living events.'*



We then went for a walk through the winding bushland with all the people in tow and I would catch any butterfly, identify it and then get a member of the audience to release it. Most people knew of the Blue Tiger, Wanderer, Grass Yellow and the 'shiny blue' (Oak-blue). It was wonderful to see the reactions on people's faces as they looked at the many different butterflies we have. We saw Fuscous Swallowtails (one female ovipositing), Orchard Swallowtails, Varied Eggflies, Bordered Rustics, Swamp Tigers, Blue Tigers, Common Crows, Purple Crows, Wanderers, Lesser Wanderers,



Yellow Albatross (only males), Bright and Purple Oak-blues, Caper Gulls, Lemon Migrants, Scarlet Jezebels, Grass Yellows, Evening Browns, numerous blues and a few skippers.

We planted some trees and found fuscous larvae on *Micromelum*. But what was pretty special was when I was back at the marque answering questions, a Common Crow butterfly started hovering around me and I held out my hand and it landed on me and rested for about 4 seconds! The people asked if this normally happens and I said no, not really! I have had a few male Eggflies land on me and the odd swallowtail briefly 'taste' my hand but not a good old Common Crow! It was a rewarding and lovely morning for all.

Photos David St.Henry

## IN THE GARDEN

In our garden at Mt. Cotton in Redland City, south-east Queensland, during March, 2015, a vibrant, female Joseph's Coat Moth attracted our attention as it feasted on the blossoms of the popular exotic Orange Jessamine (*Murraya paniculata*).

I later observed her laying eggs on a *Cayratia clematidea* vine, a known native food plant. She returned frequently over a number of days to repeat the process. I was blessed to be able to watch this process very closely as she deposited each single, creamy-yellow egg, usually beneath fresh new growth on the vine.



*Cayratia clematidea* - Photo Peter Hendry

I was even more delighted to discover a newly hatched caterpillar some time later. Having Erica Siegel visit and photograph this tiny creature answered my queries regarding the appearance of the first instar caterpillar. It was all of 3 mm long!

Its progress was checked daily, along with other caterpillars, as they feasted on the soft leaves or rested beneath leaves in their characteristic way, with their heads tucked under their bodies.

As they rapidly grew I watched for the gradual colour change that signals maturity, when the white stripes turn orange. At this stage the caterpillars leave the vine and begin, what appears to be, aimless wandering. It was also noted that some caterpillars matured at a much larger size than others and I wondered if this was related to the size differences between adult males and females.



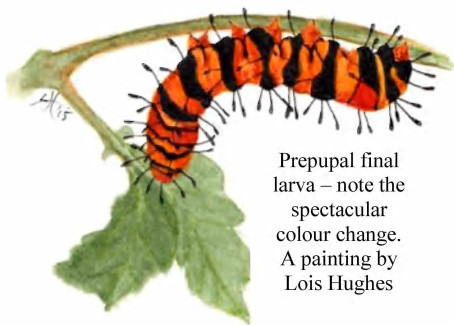




First instar larva (actual length 3mm)  
Photo Erica Siegel



Final instar larva (actual length approx. 5 cm)  
Photo Ross Kendall

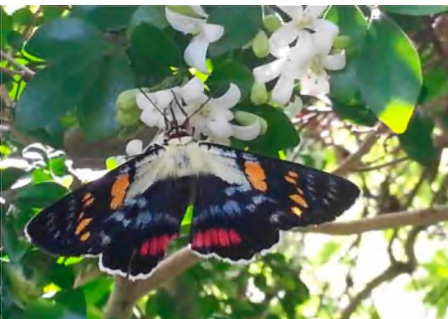


Prepupal final  
larva – note the  
spectacular  
colour change.  
A painting by  
Lois Hughes

tunnel in the wall of the box, covering the opening with coolite chewings (on 31<sup>st</sup> March). The second one chewed through the fly screen as it tunnelled into the lid.

It is now 29<sup>th</sup> July as I await their emergence.  
*Lois Hughes*

Ed: Ross Kendall adds “The pupa changes colour in the 12 hours before it seeks a sheltered roll of a leaf or piece of bark to spin its cocoon then pupates inside the cocoon.”



Joseph's Coat Moth - Photo John Hughes

## CLUB NOTICES

**Logo Competition** - Join us in our quest for a new logo design!

Although we just love our current logo designed by Lois Hughes, the club is looking for a new logo that can readably be printed on new media. The new logo will be used for promotional material, websites, the magazine and other club activities. The winner



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will receive a book of their choice from the club to the value of \$80 and the logo will feature in one issue of *Metamorphosis Australia* with a feature article on the artist.

The criteria for the logo are: (1) Represent the club aims as per the magazine page 1; (2) Simple lines; (3) 1-2 colours only; (4) 200mm by 200mm page size; (5) An EPS file and/or .tiff photo image of the artwork

Please note that the winning logo design will become copyright of the Club and the design will be professionally digitised.

Send your entries to the club secretary Jill Fechner, [secretary@boic.info](mailto:secretary@boic.info), by December 7, 2015. The committee will select the winning logo design.

### **Insect Excursion Leaders Wanted**

With an increased interest in the club holding more insect activities, the club is looking to increase the number of outings to bring together both club and community members alike and share in the delights of the insect world. As a result we would like to invite members to lead excursions. The types of excursions include garden walk and talks, bush walk and talks, night light attractions, and workshops (for example identification, photography, art) and any other ideas that you may like to offer to the committee. An activity needs to be insect focused and can run any length of time from one hour to a whole day or even overnight depending on your needs. The club has a long list of interesting places to visit (and would welcome more) but needs people to lead groups. You may also wish to consider sharing the leading of a group with one other. The committee would be happy to help you with organisation and connecting you with other people with similar interests to yours.

If you are interested, tempted or have any ideas please contact Alisha Steward - [alishasteward@bigpond.com](mailto:alishasteward@bigpond.com).

Please note that activities need to be planned well ahead of time (we are currently putting together a program for next year) so they can be published in the Magazine. Please consider contacting us as soon as possible even if you think you can do something next year.

If you know of any external people that would be willing to lead insect excursions please let us know or give them our contact details.

## **BUTTERFLY AND OTHER INVERTEBRATES CLUB PROGRAMME**

### **Planning and General Meeting**

**What:** Our planning meetings are informative and interesting. As well as planning our activities we share lots of information. All members are welcome as this activity is also a general meeting of members.

We are endeavouring to contact local landowners to gain permission to walk through their properties after the meeting. We will advise you of the details, via email, when we have finalised arrangements. (cont. over page)



**When:** 7<sup>th</sup> November 2015 from 10 am

**Where:** Jacobs Well Environmental Education Centre, 843 Jacobs Well - Pimpama Road, Norwell, Queensland

**Who:** All members are welcome

**RSVP:** Marie-Louise on 0422 970 184 or email [nabid@aapt.net.au](mailto:nabid@aapt.net.au)

#### DISCLAIMER

The magazine seeks to be as scientifically accurate as possible but the views, opinions and observations expressed are those of the authors. The magazine is a platform for people, both amateur and professional, to express their views and observations about invertebrates. These are not necessarily those of the BOIC. The manuscripts are submitted for comment to entomologists or people working in the area of the topic being discussed. If inaccuracies have inadvertently occurred and are brought to our attention we will seek to correct them in future editions. The Editor reserves the right to refuse to print any matter which is unsuitable, inappropriate or objectionable and to make nomenclature changes as appropriate.

#### ACKNOWLEDGMENTS

Producing this magazine is done with the efforts of:

- Those members who have sent in letters and articles
- Elaine Allison who provided the cover painting
- Daphne Bowden who works on layout, production and distribution
- John Moss and Peter Hendry for scientific referencing and proof reading of various articles in this issue of the magazine

#### ARE YOU A MEMBER?

Please check your mailing label for the date your membership is due for renewal. If your membership is due, please renew as soon as possible. **Membership fees are \$30.00 for individuals, schools and organizations.** If you wish to pay electronically, the following information will assist you: BSB: **484-799**, Account No: **001227191**, Account name: **BOIC**, Bank: **Suncorp**, Reference: your membership number and surname e.g. **234 Roberts**.

Butterfly and Other Invertebrates Club Inc.  
PO Box 2113  
RUNCORN Q. 4113

**Next event – Planning and General Meeting – 7<sup>th</sup> November 2015**



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